WHAT IS CLAIMED IS:

1. A method for detecting an intruder, said method comprising the steps of:

transmitting, from a transmitting impulse radio unit, an impulse radio signal including a series of impulses;

receiving, at a receiving impulse radio unit, the impulse radio signal;

generating, at the receiving impulse radio unit, a first waveform corresponding to the impulse shape of the received impulse radio signal;

receiving, at the receiving impulse radio unit and at a subsequent time, the impulse radio signal;

generating, at the receiving impulse radio unit, a second waveform corresponding to the impulse shape of the impulse radio signal received after the subsequent time; and

comparing the first waveform to the second waveform to determine whether there is a change between the first waveform and the second waveform caused by the intruder entering a protection zone.

2. An intrusion detection system comprising:

a transmitting impulse radio unit capable of transmitting an impulse radio signal including a series of impulses; and

a receiving impulse radio unit capable of comparing at least two scanned waveforms corresponding to at least two impulse shapes of the impulse radio signal that were generated at different times to determine whether a protection zone has been breached by an intruder.

3. The intrusion detection system of Claim 2, further comprising at least one more receiving impulse radio units that operate in a similar manner as the receiving impulse radio unit thus enabling the transmitting impulse radio unit to determine a current position of the intruder within the protection zone.

4. The intrusion detection system of Claim 3, wherein said transmitting impulse radio unit is capable of interacting with each of the receiving impulse radio units to track the movement of a test subject so as to create a shape of the protection zone.

5. The intrusion detection system of Claim 3, wherein said transmitting impulse radio unit further includes at least one directive antenna.

6. The intrusion detection system of Claim 5, wherein said at least one directive antenna enables the transmitting impulse radio unit to transmit the impulse radio signal in a predetermined direction.